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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,242	11/30/2003	Igor Touzov		1241
34185	7590	09/28/2005		
IGOR V TOUZOV 311 CASTLE HAYNE DRIVE CARY, NC 27519			EXAMINER PAK, SUNG H	
			ART UNIT 2874	PAPER NUMBER

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/707,242	Applicant(s) TOUZOV, IGOR	
	Examiner Sung H. Pak	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 22-24 and 26 is/are rejected.
- 7) ☒ Claim(s) 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/30/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's amendment filed 7/06/2005 has been entered. Claims 1-24, 26 are now pending.

#### ***Information Disclosure Statement***

Information disclosure statement filed 11/30/2003 has been considered.

#### ***Claim Objections***

Claim 1 is objected to because of the following informalities: the recitation "said location" on line 8 of claim 1 lacks proper antecedent basis. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 7, 9, 11, 13, 15-17, 22-24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Normandin et al (US Patent 5,375,011).

Normandin discloses an optical device with all the limitations set forth in the claims, including: an apparatus comprising a waveguide (Fig. 3), receiving or transmitting domains ('10' Fig. 3); at least one wave generator ('32' Fig. 3); wherein the generator sends pulses of signals into adjacent waveguide (Fig. 3); wherein said domains is presented by continuous

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distance or continuous area matching shape of the waveguide or collection of discrete receiving or transmitting elements (Fig. 3; Figs. 2a-2d); wherein each domains render nonlinear response with respect to energetic state of the waveguide at immediate geometrical proximity, wherein this location is a physical location of collision of at least two said pulses (column 2 lines 24-35); wherein the pulses are propagating in the waveguide by distinct passes, and fronts of the pulses interfere in a media that reveal nonlinear properties and this location interference uniquely identifies a location within said continuous range (column 2 lines 24-35); wherein said pulses have defined finite length (Fig 3, Figs. 2a-2d); wherein at least one pulse has Gaussian shape (Fig. 3); wherein the interference of said pulses dynamically alter at least one physical properties of the material (alters light transmission properties- Fig. 2a-2d); wherein the waveguide additionally coupled with plurality of transducers to query a value of predefined physical property of dynamically selected confined volume of the structure ('14' Fig. 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 6, 8, 10, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Normandin et al (US Patent 5,375,011).

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Normandin discloses an apparatus with limitations set forth in the claims as discussed above, except it teaches the use of oppositely traveling pulses, instead of pulses propagating in the same direction as claimed in the instant application.

However, inputting pulses with different phase velocities that are traveling in the same direction is well known in the art. This configuration is well known to be advantageous and desirable because it requires only one input port for introducing optical pulses and requires less amount of waveguide reducing possible transmission loss and reducing costs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Normandin to have pulses propagating in the same direction as claimed in the instant application.

***Allowable Subject Matter***

Claims 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: None of the prior art, including the Normandin reference discussed above, fairly teaches or suggests an apparatus further comprising, inter alia, waveguide fiber covering two dimensional surface using ordered pattern, in conjunction with other limitations claimed as recited in the instant application.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak  
Patent Examiner  
Art Unit 2874

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